DOCUMENT RESUME

ED 123 141 SO 008 991

AUTHOR McHale, John; McHale, Magda Cordell
TITLE Futures Studies: An International Survey.
INSTITUTION United Nations, New York, N. Y. Inst. for Training and Research.
PUB DATE 75
NOTE 41p.
AVAILABLE FROM United Nations Institute for Training and Research, 801 United Nations Plaza, New York, New York 10017 (sales no. E.75.XV.FS/1, $4.00)

EDRS PRICE MF-$0.83 HC-$2.06 Plus Postage.
DESCRIPTORS Discipline; *Futures (of Society); Methods; Organizations (Groups); Personnel Data; Planning; Prediction; Research; *Surveys; *Trend Analysis

ABSTRACT

This report contains the results of an international survey of future studies, carried out between March 1974 and March 1975. The purpose of the survey was to obtain a profile of major futures studies activities--who is doing what, with what objectives, and using which approaches and methods. Of 3,000 organizations and individuals in a variety of institutional settings at different levels of engagement with future studies surveyed by mail, 433 organizations and 527 individuals from 50 countries responded. The analyses include information on range and orientation of work being done, factors influencing the direction of work, methods used, annual funding, institutional linkage, areas of planning and research, major field of training and personal data on individuals involved, and time range of work. (Author/RM)

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FUTURES STUDIES

AN INTERNATIONAL SURVEY

By John McHale and Magda Cordeil McHale

UNITAR

FEB 10 1976

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United Nations Institute for Training and Research

CONTENTS

Preface ..... **IV**

Acknowledgements ..... **V**

Procedural Outline **1**

Summary Overview **3**

Analysis of Survey Responses **11**

Organizational **12**

Cross Comparison Appendix (Organizational) **20**

Individual **28**

PREFACE

The past few years have seen a burgeoning of interest in the year 2000 and beyond. Serious scientists and conjecturers alike are devoting untold man-hours of work to the subject. Industry and Governments too have assigned the topic a top priority, in the realistic view that no long-range planning will have true validity unless the Future is anticipated today.

Through UNITAR's "Project on the Future," directed by M. Philippe de Seynes, former United Nations Under-Secretary-General for Economic and Social Affairs, UNITAR hopes to identify and analyse problems and trends of long-range interest and concern to the United Nations system and the international community. An important consideration in advancing this project is that our methods of considering the longer-term future, if it is to help in the shaping of present-day decisions, must be of a nature which would gain general acceptance. One of the conditions for this would be the enlargement of the basis from which it is undertaken and the resulting general consensus for the directions of the programme. It was therefore necessary to find out at an early stage, the work carried out in all parts of the world and the different approaches and objectives adopted by researchers and institutions.

Thus, UNITAR decided to undertake a global survey of futures studies. We were very fortunate in being able to entrust this work to Dr. John McHale and Magda McHale of the Centre for Integrative Studies at the State University of New York. They have been pioneers in this field and have had wide contacts with individuals and institutions in all parts of the world. We are very grateful for the excellent work they have done in carrying out this survey.

While this survey has been done for UNITAR, the responsibility for the data gathered and the presentation of such information and views are entirely those of the McHales. We should also like to thank all those who have responded to the enquiry and extended their cooperation by furnishing the required information.

We hope that this survey will be found useful by the innumerable scholars, planners and organizations engaged in studying the problems of the future. The contacts established through this survey will also help in disseminating information about the researches being undertaken in different parts of the world and in promoting the much-needed international cooperation.

Davidson Nicol
Executive Director

ACKNOWLEDGEMENTS

This report is based on an international survey of futures studies, carried out between March 1974 and March 1975, in co-sponsorship with the United Nations Institute for Training and Research (UNITAR).

Primary emphasis was placed on obtaining a profile of major futures studies' activities—on who is doing what, with what objectives, and using which approaches and methods. With this in mind, we have surveyed both organizations and individuals in a variety of institutional settings, and at different levels of engagement with such studies. Responses to the survey cover 433 organizations and 527 individuals in 50 countries. A number of marginal responses which did not fit into the survey categories will also be included in the overall assessment.

Our principal concern was to map the field in a manner that would provide substantive information on the range, scale and general thrust of its major activities. From this mapping, we have developed a comparative analysis of these factors, and a summary response profile has been prepared for each organization and individual.

The survey is not an exhaustive inventory of the field. Indeed, due to delays in the mails, to changes of address and so on, many key responses are still coming in, and several important contributions are not yet available despite efforts made to obtain them.

It is important to underline also that we are *not* reporting on the state of the art in the field itself, nor are we evaluating the methods used or the forecasts which are generated. Some evaluative comment will be introduced but it is not central to the purpose of this assessment.

In acknowledging the assistance and cooperation of various persons on this survey, we would like first to express our thanks to the many individuals who took time and care in providing detailed answers to our numerous questions.

The Executive Director of UNITAR, Under-Secretary-General, Dr. Davidson Nicol, the then Deputy Executive Director and Director of Studies, Oscar Schachter and Deputy Director of Studies, Alexander Mironov were extremely helpful in forwarding the project generally. Hugues de Jouvenel, in his sojourn at UNITAR, also provided many valuable suggestions at the inception of the survey. Margaret Croke, of the UNITAR staff gave much patient guidance to the intricacies of the United Nations system itself.

The staff of our Center has contributed in major ways to this study. In particular, we would like to mention the work of Laurence Tobias and Guy Streatfeild, respectively, in data analysis and in compiling source materials for the survey. Denise Durkot and Mary VanFossen performed sterling work in coordinating the flow of information. Our external consultant on computer programming, Luther Haibt, mediated between our idiosyncracies and those of the machine. All have given time and energy to the project far beyond their normal work commitments. We are most grateful.

John McHale, Director
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PROCEDURAL OUTLINE

This study is an extension of several surveys of the futures field carried out by the Center since 1969. Two of these were formally restricted to the United States as sponsored by the National Institute of Mental Health.[1] They were augmented by international returns through circulation of the survey form via FUTURES journal, United Kingdom during 1970, and its extended use by other centers in various world regions.

For the present survey, a new listing of organizations and individuals was prepared from the authors' own files and a literature search of major source works in the field. This was expanded in various ways by:

(i) including the United Nations Missions and Secretarial Divisions and the other United Nations agencies.
(ii) circulation of the Scientific Attachés to the Embassies in the United States.
(iii) letters of enquiry regarding survey candidates to the National Academies of various countries, and other types of national institutions.
(iv) corporations selected from many sources.
(v) international non-governmental organizations listed in various yearbooks.

CRITERIA FOR INCLUSION in the final survey was based on:

(i) production of work in the field as formally defined.
(ii) frequency with which organizations and individuals were referred to in the literature.
(iii) other activities which contribute to the overall development of the field, e.g., conference and work group organizations, coordination of projects, documentation work.
(iv) potential contributions to the formation of and influence on future developments, even where these were not identified as futures studies and/or long range planning activities per se.

Though the survey was primarily designed to elicit a profile of futures studies and associated long range planning, it was not restricted to those primarily engaged in such work. We were also concerned with the identification of activities which affect future developments in the longer term, but are not formally defined as futures studies.

Examples of this latter category would include:

(i) Science policy, technology assessment, social indicators work etc.
(ii) Corporate planning of various kinds.
(iii) The work of some governmental and non-governmental organizations, though not defined as futures studies or long range planning, in the conventional sense, is concerned with the future consequences and implications of human action.
(iv) Research and development activities which might influence and shape the future.

The end listing contained over 3,000 entries. Given time and other constraints we decided to use a mailed survey form, even though such a method has obvious disadvantages in attempting to elicit a detailed profile of the kind of work being done by such a variety of individuals and institutions.

Two separate questionnaires were designed for organizations and individuals. Each contained respectively 30 and 32 questions bearing upon the orientation of work being done, specific engagement with futures studies and long range planning, methods used, support structure, etc.

Though the survey forms were organized for computerized analysis, respondents were encouraged to give additional comments and enclose appropriate supporting materials.

Forms were mailed with an explanitory cover letter to those on the final list i.e. approximately 3,000. The response pattern to date is roughly as follows:

a) 960 completed survey forms have been received, some with additional materials.
b) 12 responses were by letter only accompanied by items illustrative of work being done.
c) 14 organizations replied that they did not consider the survey to be applicable to them.
d) 30 mailings have been returned where addressees had moved or no longer existed; 76 returned with incorrect addresses.

Returns continue to come in and will be incorporated in the summarized response listing. Many have

[1](i) Typological Survey of Futures Research in the U.S. (1969-1970) NIMH Contract No. HSM-42-69-47
(ii) Continuation of Above Survey (1971-1972) NIMH Contract No. HSM-42-71-71.

acknowledged receipt of the survey forms but are holding responses until key personnel are available to complete them.

Some potentially large contributions from specific nations, such as the U.S.S.R. and the People's Republic of China are either meagerly represented or not represented at all, despite efforts to secure an adequate response by the due date for this report. This may, of course, be remedied later as further returns accrue.

A cut off date for machine processing of completed questionnaires was set for mid February 1975. By this time, 926 of these were in hand.

This analytical base of 926 should not therefore be regarded as a 'methodical sample' in the usual sense. It is, however, sufficiently representative of the range of the response to give various comparative measures to the balance of orientations, methods, and approaches in the overall field.

SUMMARY OVERVIEW

This study is descriptive rather than definitive. It is concerned both with futures studies as formally defined and with other activities which are concerned more generally with the future.

The interests which generated the study arise from an awareness by UNITAR of the need for more systematic engagement with long range prospectives.

The Institute recognizes a common urgency about the longer range aspects and interactions of world problems. Wholly unilinear and short term approaches are no longer appropriate. We live in a highly interdependent world system whose complex interrelationships must be now viewed in terms of their longer term consequences and implications.

The common awareness and sense of urgency have generated much debate regarding the alternative kinds of futures which we may face. Some advocate limitations on certain aspects of material growth; others are more sanguine about the possibilities of further global development.

Underlying these extreme positions is a renewed interest in future perspectives not only in the shorter term of the next decade but extending up to and beyond the symbolic benchmark of 2000.

This interest has been accompanied by a rapid growth in futures studies and a proliferation of future oriented activities in many societies around the world. Various levels of engagement in this spectrum of concern range from official government commissions to local citizenry groups and world assemblies.

FIELD DEFINITION

In these summary notes on the range of futures work, it may be useful to qualify some of the terms in general use.

Those describing the overall field itself, exhibit considerable variety. Futuristics, futurology, forecasting, and futures research are all used widely, and somewhat interchangeably. *Futuribles*, the word coined by de Jouvenel, tends to be restricted to Western Europe. There is a preference for *prognostics* in Soviet and Eastern European usage, with additional descriptors such as social, economic, political and so on. As the field has grown in respectability, *futures research and forecasting* tend to be preferred in more academic discussion.

One might comment that almost all of the terms are somewhat misleading. They carry the implication of the opening up of a new field of knowledge with varying overtones of scientific rigor. This often raises expectations beyond what the field can provide. We have, therefore, used the more modest and ambiguous term, *futures studies*, in this report to convey the idea of an activity which embraces many elements—of prediction and conjecture, and of imaginative extrapolation and normative projection. The central emphasis is on the study of the future.

This preference also carries within it the idea that the main purpose of the activity is not to prophesy what a specific future will be, but rather more to explore the plurality of future(s) states which may be contingent upon our actions or accessible to our choice.

There is a shift within the field itself, from an emphasis on prediction and linear forecasting towards normative modes of considering a range of alternative futures. Those involved in futures studies are now generally concerned with 'alerting' functions, which may indicate ranges of positive and negative consequences resultant upon present or proposed courses of action, and with exploring the costs and benefits of alternative value preferences, goal orientations and human options.

One might also differentiate between forecasting, long-range planning and futures studies. In practice these may be woven together but they do have certain independent aspects.

Some highly generalized characteristics may be listed as follows:

a) *Forecasting* tends to assume some set of definable causal relations between events through which one can predict their future states—with varying levels of probability of occurrence. Many forecasting activities are also restricted withint some *given* set of value premises. This applies particularly in much economic and technological forecasting.

This latter 'value free' aspect is undergoing subtle transformation as activities such as 'technology assessment' grow in importance. Such assessment procedures, by their nature and origin, are arrayed against more specific value preferences.

b) *Long range planning*, though emphasizing the long range, is generally concerned with the organization of events within the next five to ten years as in much corporate and governmental planning. Its horizons are usually limited by its

functional relationship to some specific sector of the society.

Such planning is also characterized by *implied* value assumptions. The concern is with how some activity may be planned, rather than with why it should be planned. The latter may be discussed within the process but the tendency is to assume this as given and to proceed with the more instrumental aspects of the planning activity itself.

Again, as the longer range planning process begins to move to the international level, differences in value preferences have moved to the fore. In national planning, the need for better 'social indicators' to aid the planning process has lead to more explicit value measures within the process.

c) *Future studies* tend to be oriented towards the longer term, as extending beyond the next two or three decades. It is essentially an open ended and less definable process as to its methods and approaches, than forecasting and long range planning.

Though many such studies are tied to a specific sector of society or to some closely focussed area of activity, there is less tendency to identify with the given structural premises of the sector or focus of the study. It is assumed that these are also open to speculation as to their futures.

More often than not, future studies are concerned with *explicit* sets of value considerations and preferences. Rather than assuming the given nature of larger causal relations these are taken as open to question. There is an underlying shift from what may be feasible under given constraints to what could or should be possible and/or desirable—if we choose to alter the constraints upon present and future actions.

Another way of classifying the overall group would be according to their primary orientation and methodological approach. For example:

a) *Descriptive*. As embracing various conjectural, speculative and imaginable modes. This would include a wide range of studies from essays on the future of some particular human activity to 'whole society' futures in which a variety of alternative directions may be described.

b) *Exploratory*. This term is usually reserved for the methodical extrapolation of past and present developments into the future, i.e., including economic and technological forecasts and scenario building. Delphi exercises and cross impact analyses belong in this group though many uses of these methods are non-extrapolative, and prescriptive.

c) *Prescriptive*. This approach is essentially one in which 'normatively' oriented futures are projected where strong value assertions and choice are presented within a framework of alternative states.

N.B. For a more detailed discussion of these differences and convergences in field orientation and methods, the reader may refer to some of the works listed below.[2]

DEVELOPMENT OF THE FIELD

In the past ten years, futures studies, forecasting and long range planning have expanded considerably both in the numbers of persons and organizations at work and in the range, volume and types of activities in which they are engaged.

One index of this would be the growth in size of world congresses. The first such conference in Oslo, 1967, had approximately 30 participants; the second, in Kyoto, 1970, had over 250; the third in Bucharest over 300.

These are conferences of those specifically involved in futures studies, or 'futures research', as formally defined. The increase in the number and frequency of such meetings would be even more dramatic if one included the growth in more specialized conferences in

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[2] Bertrand de Jouvenel, *The Art of Conjecture*, Basic Books, Inc., 1967.

Erich Jantsch, *Technological Forecasting in Perspective*, OECD, Paris, 1967.

Forecasting and Systems Approach: A Critical Assessment, paper, Conference on Long Term Planning and Forecasting, International Economic Association, December, 1972.

Daniel Bell, *Twelve Modes of Prediction*, Daedalus Journal, summer, 1964, pp. 845-878.

Fred L. Polak, *Prognostics*, Elsevier Publishing Company, New York, 1971.

James R. Bright, Milton E. F. Schoeman, eds., *A Guide to Practical Technological Forecasting*, Prentice-Hall, Inc., New Jersey, 1973.

Robert U. Ayres, *Technological Forecasting and Long Range Planning*, McGraw Hill Book Company, New York, 1969.

Charles de Hoghton, William Page, Guy Streatfeild, *and Now the Future, A P.E.P. Survey of Futures Studies*, London, P.E.P., 1971.

other disciplines such as anthropology, sociology, political science, etc., which now contain 'futures' sections on their agenda.

The number of organizations concerned primarily with futures work has grown, and the adoption of longer term perspectives by other types of organizations has increased significantly.

In terms of our current survey, several tendenc may be noted within the overall field.

The first would be the expected and normal drive for professional recognition and higher standards of methodological rigor by those accumulating expertise and experience in the field. This is reflected: (a) in the rise in the number of journals and newsletters devoted to futures, forecasting and long range planning, and (b) in the numbers of courses on various aspects of the field being offered at universities and indeed throughout the educational system.

The perception of world crises in population growth, energy, food and materials supply, fueled by media coverage of their future dimensions has turned many shorter range preoccupations towards longer term perspectives. This has been reinforced by the world attention and prestige given to the emergence of large scale studies of "The Limits to Growth", and others sponsored by the Club of Rome. The impact of best sellers such as "Future Shock" by Alvin Toffler, translated into many languages, has also exerted considerable influence.

In addition, the number and range of professionals coming into the field from other areas has risen and changed, particularly over the past five years. Where the earlier predominance was in physical sciences, engineering and mathematics, more recent expansion has come from the social and behavioral sciences and humanities.

The second tendency has been from futures work as a kind of disciplinary enclave towards becoming a social movement. Other issue-oriented movements, such as civil rights, ecology, consumerism, anti-war and so on, have had their successive waves of popular attention and participation. As these 'burn out', many of their adherents have moved over into involvement with the future. The themes of such involvement tend to be carried over also from their previous locus; for example, the ecology issue translates into the future of spaceship earth.

As we shall note later, some of these social movement involvements coalesce into larger associational groupings. In the U.S., for example, projects such as Hawaii 2000 and Iowa 2000 draw their broad participant support from those who are, or were, active in other issue areas.

The third direction has been somewhat conditional on the first two above. Given the normal institutional lag, there are a growing number of futures secretariats, commissions or study groups at national governmental levels. These have been linked, in part to the development of international initiatives by the United Nations, and other bodies, in projects like the World Environmental, Population and Food Conferences which have generated concern with longer term challenges and issues.

To summarize these tendencies figuratively, one might say that the futures field has gone from the small, and rather steep, pyramid form of its earlier phases to an hour glass formation.

There is a large popular base, a relatively constricted and more slowly growing number of professionals in the middle and a widening of official organizations, governmental and otherwise, at the top.

Examples of the above field groupings may be noted as follows:

1. NATIONAL GOVERNMENTAL LEVELS

This aspect is rendered somewhat more complex by the difference in what we call the centrally and non-centrally planned economies.

The former, with the U.S.S.R. as prime example, have always been committed in various ways, to longer term planning—to five, ten and lacterly twenty-five year plans. These, though economic, in overall emphasis and direction, have been extended into many other spheres.

As Inozemtsev notes,

> "The contemporary system of planning and forecasting in the Soviet Union incorporates almost 60 years of experience in the development of the world's first socialist state. Applied to regions with initially unequal levels of socioeconomic development and different historical traditions, this constructive experience covers production, social and national relations, politics and state administration, science and technology, culture and other fields of the spiritual life of man."[3]

In the Eastern Europe countries with similar outlooks, such long range planning and futures work is also most typically carried out via their various Academies. In Czechoslovakia, one such key study into that country's long term future was prepared by the "Interdisciplinary Team for Research into the Social

[3]N. Inozemtsev, Director, Institute of World Economics and International Relations, U.S.S.R. Academy of Sciences, *Planning and Forecasting Social Development: Soviet Experience*, paper for "UNITAR Symposium on Problems of the Future", 1974.

and Human Implications of the Scientific and Technological Revolution"[4] of the Academy of Sciences' Institute of Philosophy and Sociology.

In Poland, the Polish Academy of Sciences has its Research and Prognostics Committee whose work is regularly published in its own journal "Polska 2000". Sicinski summarizes this discussion for the socialist countries as follows:

> ". . . Studies into the future are carried out, first of all by several centers in the U.S.S.R., most notably by the Soviet Academy's Institute of Sociological Research. Forecasting projects are also pursued in the GDR (i.e. economic forecasting system), in Czechoslovakia. . . . in Hungary, Bulgaria and Yugoslavia. Some forecasting projects have also been undertaken within the framework of the Council for Mutual Economic Assistance.
>
> In Poland, prognostical studies are carried out mainly by the Planning Commission attached to the Cabinet, the "Poland 2000" Research and Forecasting Committee set up in 1969 at the Polish Academy of Sciences, and by the Ministry of Science, University Education and Technology, by the Center for Prognostical Studies, Warsaw, Wroclaw Polytechnical Institute, et al. The Social Prognoses section at the Institute of Philosophy and Sociology, Polish Academy of Sciences, specializes in research into the future of culture and related methodological problems . . . forecasting or prognostication is treated as a separate field of research carried out in close connection with planning . . . although perhaps the problem of mutual relations between these two fields has not yet been sufficiently defined."[5]

N.B. The 'relation problem' in the last paragraph is a particularly interesting one about which we will comment later.

Turning to the less centrally planned economies, the picture is somewhat different.

In Sweden, a Working Party on the Future was set up in May 1971 by Prime Minister Olof Palme. Alva Myrdal, then Minister of State, was appointed chairman. Out of this has come the Swedish Secretariat for Futures Studies which is administratively attached to the Cabinet Office. Their first report of 1972, "*To Choose a Future*", discusses topics of specific concern for Sweden but also reviews global and national activities in the futures area. It also reports on the work of non-governmental Swedish futures organizations, to which we will return below.

In the Netherlands, long range planning is somewhat more closely linked to government. The Central Planning Office has issued a report on "The Netherlands Economy in 1980". The Ministry of Transport and Public Works published a projection into the future entitled "T. P. 2000". The Provisional Scientific Council for Government Policy, which evolved out of the Wolff Committee for Research in the Future Structure of Society (1968), is set up

> "to obtain some idea of the future of society, give a comprehensive picture of this and place the Government in a position to pursue politics that are rational in the light of developments anticipated in the long term . . . The Council's position is somewhere between the Government and society at large."[6]

There are also a number of other futures groups and centers in the Netherlands with quasi-governmental liaison, e.g. the European Cultural Foundation with its ongoing Europe 2000 program.

The Danish Social Science Research Council, in 1970, set up a committee for Futurology under its vice chairman, Henning Friis, Director of the National Institute of Social Research. The Committee's report on "Society and Future" of 1973 surveys futures work in Denmark and elsewhere, and discusses ongoing governmental involvement in longer term planning, i.e. "Perspective Planning 1970-85".

France has its Commissariat du Plan which, though more concerned with conventional long range national planning, has important links with the main French centers for futures studies, e.g., the pioneer group Futuribles headed by Bertrand de Jouvenel and the Centre d'Etudes Prospectives. A large number of influential French studies have been published in the futures and long range planning area. Discussion of these may be found in the journal "Analyse et Prevision" of the Futuribles group.

The Federal Republic of Germany relies mainly, at the official level, on its Ministry of Research and Technology for long range perspectives though there are, of course, many non-governmental futures study centers in that country. The Ministry's task is defined as locating feasible alternatives for technology policy in the light of structural changes in the local and world society and changes in patterns of resource dependency.

The United Kingdom's version of an official long range prospective unit was the Government's Central Policy Review Staff headed by Lord Rothschild. Much of the broader, more future oriented, directions have,

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[4]Report published in several languages. Radovan Richta et al, *Civilization at the Cross Roads*, Prague, International Arts and Sciences Press, 1969.

[5]Andrew Sicinski, (Head, Division of Social Prognoses, Institute of Philosophy and Sociology, Polish Academy of Sciences), "*The Main Trends of Contemporary Future Research*", Polsak 2000 Journal, Spec. No./1974, pp. 39-40.

[6]Correspondence Notes, from the Provisional Scientific Council for Government Policy, The Netherlands, 1974.

however, been encouraged by the Social Science Research Council and its Social Forecasting Committee. A good deal of substantive futures work, partly supported by the SSRC, has been carried out by the Science Policy Research Unit of the University of Sussex which has also emerged as one of the more important 'futures' centers internationally. In the U.K., the Post Office has been a focus for long range forecasting activities. This is also the case in some other countries, such as Australia, and derives from engagement with a swiftly developing technology, i.e. telecommunications. This engagement has led such forecasting far from its original technical base to consider overall societal impacts.

This diversity of linkage between governmental ministries and other futures research units external to government is typical of Europe generally. One of the more important quasi-governmental centers has been the Scientific Directorate of O.E.C.D. which pioneered, and encouraged, many long range studies under the directorship of Alexander King.

In Canada, the Special Committee on Science Policy headed by Senator Maurice Lamontagne has expressed the need for a Canadian Commission on the Future, amongst whose functions would be,

> "Encouraging Canadian decisionmaking units of all kinds and in all sectors of Canadian Society to conduct futures studies.
>
> Organizing meetings for the discussion of future studies between regional and national groups of decisionmaking organisations.
>
> Investigating methods for public involvement in futures studies."[7]

There also are a number of other governmental units and non-governmental centers in Canada concerned with aspects of futures studies and forecasting.[8]

The United States has been curiously laggard in its pursuit of such work as an 'official' government business, considering the leading role that American futures workers have played in the development of the field. This is partially explicable in terms of traditional avoidance of centralized long range planning, apart from defense and aerospace, and of spreading such work amongst a variety of non-governmental institutions. The Rand Corporation has been one of the main conduits for such work and has in turn spun off, directly and indirectly, many of the key centers and researchers in the field, e.g. Herman Kahn, Olaf Helmer, and Theodore Gordon of the Hudson Institute, the Center for Futures Research, and The Futures Group, respectively. This tradition has been continued through various 'futures' support programmes of the National Science Foundation in recent years.

This traditional policy is now changing. The Office of Technology Assessment conforms, in many senses, to the idea of a 'look out' or 'early warning' institution whose purview goes beyond technology, per se, towards its longer term impacts upon many dimensions of society. Joseph Coates, Director, Office of Technology Assessment, gives a succinct definition of this activity,

> "Technology assessments are studies directed at exploring the impacts on society of the introduction of new technology, or the expansion or extension of an existing technology in new or different ways, or to a new and greater extent than in the past. In other words, technology assessment attempts to perform a comprehensive analysis of impacts of a technology on society including not only the traditional economic and safety criteria, but also embracing effects on the natural and social environment, institutions, political systems, legal implications, ramifications for trade, and virtually every other aspect of society."[9]

At present, such assessments are more retrospective than prospective in dealing with existing technological impacts, but recent work has begun to take on a more anticipatory perspective.

One recent and significant change in official policy in 1974 has been the introduction of the 'foresight' provision in the House Rules at the Congressional level. Though not spelt out specifically as a mandate for futures studies by the 'House', it calls upon its committees to consider the longer term consequenses and implications of legislative and administrative action. Another shift is the setting up of a 'futures' information group within the Congressional Research Service of the Library of Congress.

Quasi-governmental activity in the U.S. has also taken the interesting direction of involving large scale citizenry groups in futures speculation at the state and regional level. The pioneer model of this type was Hawaii 2000[10] which subsequently led to a Governor's Commission on Hawaii 2000. Others have followed this lead, notably Iowa 2000 and the Puget

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[7]Correspondence, P. J. Pocock, Director of Special Research, The Senate Special Committee on Science Policy.

[8]André Barsony, Fred G. Thompson, "Long Term Forecasting in Private and Public Organizations in Canada (and associated papers), Economic Council of Canada, November, 1972.

[9]George Chaplin, Glenn D. Paige, eds., *Hawaii 2000: Continuing Experiment in Anticipatory Democracy*, published by the University of Hawaii Press, 1973.

[10]Joseph Coates, Preface, *Candidates and Priorities for Technology Assessments, Volume IV, An Approach to Priorities*, National Science Foundation, 1974, p. iii.

Sound Regional Conference. This would appear to be a direction which will be sustained and broadened in the next year or so by similar activities of the 'Horizon' section of the U.S. Bicentennial Program of 1976.

The role of *international governmental* and *non-governmental agencies* in the field is somewhat less clear. Much future oriented work is carried out within the framework of organizations whose principal mission may be a much wider one. Most of the major agencies such as UNESCO, UNEP, and FAO have conducted specific studies on the future of education, of environmental impacts and on the long term world food supply as appropriate to their mission. Other non-governmental entities such as the International Council of Scientific Unions make a less direct, but nonetheless important, contribution via programs such as 'Man in the Biosphere', which have long term prospective viewpoints.

One of the key contributions to future studies was the Commission on the Year 2000 set up by the American Academy of Arts and Sciences under the chairmanship of Daniel Bell. Its report, in 1967,[11] quickened scholarly interest in the area and remains a model of its kind for this kind of organized enquiry.

2. NATIONAL AND INTERNATIONAL PROFESSIONAL SOCIETIES

Many have entered the field more recently by allocating parts of the agenda of their annual meetings and congresses to future oriented topics. Some of the specific disciplines mentioned earlier, such as anthropology and sociology, are prominent here.

Others have convened special conferences and ongoing programs oriented toward particular long range concerns. The World Academy of Art and Science has an ongoing series of joint international conferences specifically aimed towards long term global policy reviews of developments in various fields, their social consequences and policy implications.[12]

Professional forums and assemblies have been in existence for some time to discuss the longer range impact of current affairs on the world scene. These are not generally oriented toward ongoing substantive work, and though important in fostering the climate of ideas, they are not included in this survey other than by representative examples.

3. RESEARCH CENTERS AND INSTITUTES

On balance, the bulk of the substantive work in futures studies is carried out in this type of institutional framework. Despite the support and manpower figures given in the analysis which follows, most of the key centers are relatively small both in numbers of persons and range of financial support. The larger funding and manpower figures are skewed towards governmental and other agencies, whose primary mission may be in some other area, but their survey data may include all activities.

One interesting point which emerged in our earlier surveys, and still holds true, is that much of the pioneering, large scale multivariate futures projection, is done by individuals and groups, not in institutionalized programs labelled as futures studies. They are often not primarily funded for such work but support it from their other professional activities.

As the field gains in interest and validity, such individual positions become more difficult. The larger organizations, which failed to support such long range exploration when it was less fashionable, now move into the area with greater resources and personnel—though often still lacking the insights and vision of the individual worker. The latter is progressively squeezed out, just as the work which he or she pioneered gains wider validation and support!

As in other areas of enquiry, organizational support tends to go to other organizations, and rarely to the individual. Consequently, as the more creative and original workers are pushed successively into more marginal positions, the overall substantive contributions to the field are correspondingly diluted. This process is not confined to futures studies but the peculiar nature of the field intensifies it considerably.

4. WORLD ORDER AND WORLD MODELLING PROJECTS

These are of sufficient interest and significance to require a note by themselves.

The "World Order Models Project" was initiated by the World Law Fund. This has proceeded via international study teams set up in various countries around the world to explore alternative models for future world orders in the next twenty-five years.

The basic approach is organized around agreed value sets and goals.

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[11] *Towards the Year 2000: Work in Progress*, Daedalus Journal of the American Academy of Arts and Sciences, Summer, 1967.

[12] *Environment and Society in Transition*: 1. Scientific Developments, Social Consequences and Policy Implications (1970).
2. World Priorities (1974) published as Annals of the New York Academy of Sciences.
3. *Science and the Future of Mankind* (1965), Hugo Boyko, ed.

"In designing the World Order Model for the 1900's, we assume the following three goal values: peace, welfare and identity. These are our World Order values, and the purpose . . . is to set forth an approach to the model of World Order most suited to the optimial maximisation of these values."[13]

The DEMATEL project, funded by the Battelle Institute, is one of a number of future oriented studies being conducted by this organization. Its principal aim is to strive for a better understanding of the structure of world wide problems. The acronym is derived from the creation of a simulation center for testing global policies, i.e. *DE*cision-*MA*king *T*rial and *E*valuation *L*aboratory. The two main components in this research activity are,

"1. the development of *innovative methods* required for dealing with the qualitative and events-linked aspects of societal problems.
2. the development of man/model interactive techniques for facilitating the dialogue between action and research."[14]

This Battelle program is remarkably similar to The World Game[15] project of R. B. Fuller's developed at the World Resources Inventory Center, Southern Illinois University in 1966, and ongoing in various forms by student groups.

The Club of Rome sponsored project, "The Limits to Growth" has already been mentioned. Some indication of its other projects may be pertinent here.

The most recent Club of Rome project was reported in the book, "Mankind at the Turning Point", by Mahajlo Mesarovic and Eduard Pestel of the Systems Research Center, Case Western Reserve University (U.S.) and the Technical University Hanover (W. Germany) respectively.

The Bariloche Foundation of Buenos Aires, Argentina is engaged in a study of an egalitarian society. The Japan Work Team under Yoichi Kaya, University of Tokyo, has several projects ongoing, specifically one concerned with the transfer of labor intensive industries to lesser developed countries. The Dutch Work Team is completing the first phase of its future projection of "Problems of Doubling World Population" under Hans Linneman, University of Amsterdam; also in the Netherlands is the RIO project, under the direction of Jan Tinbergen, concerned with the future adjustments in world need equity.

Several other Club of Rome national groups have also been created in Sweden, Australia and Switzerland.[16]

The Club of Rome has been particularly characterized not only by the scale of the projects it has initiated, but by its careful attention to the wide circulation of their results, and by their deliberate efforts to bridge the gap between research of this kind and political policy making. Ongoing work has been consistently paced by presentations and discussions to statesmen and legislators from countries of differing ideologies and conditions.[17]

5. FUTURES SOCIETIES

There are now a variety of membership societies clustered around the theme of the future. They are not necessarily engaged in futures work themselves but their prime function is to encourage awareness of the future, to disseminate materials through their journals and newsletters and to develop local and national group activities.

One of the earliest of these, still existing, is Mankind 2000. Originating in London, and given its title by pioneer 'futurist' Robert Jungk, this society was one of the cosponsors of the first futures studies Congress[18] in Oslo in 1967. Through its executive director, James Wellesley-Wesley, it has been actively engaged in the initiation and organization of the later world congresses in Kyoto and Bucharest, and the Special Rome Conference on Human Futures[19] arranged by IRADES, the Italian futures studies center. Though never large or extensive in its membership this society has had an important catalytic function in the development of futures studies.

The most active and largest of this type of organization is The World Future Society, headquartered in the United States but with local chapters in several

[13]Yoshikazu Sakamoto, *An Approach to the World Order Models*, paper, UNITAR/CNP/IO, 1973.

[14]Battelle Geneva Research Center, *The Purpose of Contemporary Society and the DEMATEL Research Project*, 1973.

[15]John McHale, *2000+*, special issue Architectural Design, 1967, includes illustrated description of this project.

[16]Report based on correspondence with Aurelio Peccei, 29 April, 1974.

[17]For a comprehensive review of world modelling projects of this nature see Sam Cole, *World Models, Their Progress and Applicability*, pub. Futures journal, U.K., June 1974, pp. 201-218 (part of large ongoing study of the Science Policy Research Unit, University of Sussex, U.K.).

[18]Robert Jungk, Johan Galtung, eds., *Mankind 2000*, pub. Universitets-forlaget, Oslo 3, Norway 1969, also George Allen and Unwin Ltd., U.K., 1969.

[19]*Human Futures*, published by Futures journal, IPC Science and Technology Press, (U.K.), 1974.

other countries. The Society's growing membership reflects increased interest in the future, it has risen from 200 in 1967 to over 12,000 by 1974. In addition to publishing its own journal "The Futurist", it also has a supplemental programme of circulated papers and has recently launched its own book series.[20] A recent and intriguing aspect of the Society's expanding activities is its Employment Service to help members find future oriented jobs.

There are a number of similar societies in other countries. One country example may suffice here. The Swedish Society for Future Studies, a membership organization, organizes lectures and discussions. The Swedish Association for Future Studies, a subsidiary of the Royal Swedish Academy of Engineering Sciences, serves companies, authorities and other organizations with a regular information service and special studies of interest on a yearly subscription basis.

Of a somewhat different character from the preceding societies is the "World Futures Studies Federation". This organization has been germinating since the 1967 Oslo meetings indicated the need for some more formal linking agency for exchanging information between futures studies' centers and individuals around the world.

The various individuals concerned with the federation have been somewhat cautious about the possibility of premature closure of the field by the imposition of undue organizational structure; it has therefore developed rather slowly. At the third World Futures Research Congress in Bucharest, 1971, a recommendation was finally adopted to create the Federation as a kind of international liaison structure for specialists in the field. In 1973, The Federation was formally inaugurated in Paris with its Founding President, Bertrand de Jouvenel later giving way to the current President Johan Galtung. Its aims are to plan and carry out regional and international conferences and workshops: to serve as a forum to encourage cooperative research activities; to stimulate awareness of the need for organized futures studies and the future problems of the world; to promote the democratization of future oriented thinking.

The latter aim reflects a particular dichotomy between various futures workers, and is rather characteristic of the nature of the field itself. On the one hand, there is a continuing drive towards increased specialization and professionalism amongst those engaged primarily with futures studies; on the other, there is the perceived need to engage the broadest and most diverse array of persons, both professionals and non-professionals, with futures oriented thinking and action. This polarization between 'scholar' and 'activist' continues. In summarizing the core of the debate, Dror has underlined,

> "sharpening some of the required hard choices which must be taken by futurists if they want to prevent futures studies from becoming too many things to too great a diversity of persons, and thereby eventually degrading into becoming nothing to all."[21]

END NOTE

It may be fitting to conclude this summary overview in the general tone of the remark quoted on the preceding page.

This report attempts to broaden and, at the same time, redefine and focus the overall purview of futures studies. Our going beyond the formally defined province of futures scholarship to seek out other 'futures' contributions is part of that scholarship itself.

As with other fields, futures studies tend to suffer from an imbalance of analysis and differentiation as against synthesis and integration. In this specific field, and in our particular period, where the whole-system-effects of change are critically important, it is necessary to adjust this balance.

A key challenge within futures studies is the substantive assessment and integration of significant prospectives generated in all fields of human endeavor. We hope that this survey may help to identify a greater diversity of these prospectives, and so enlarge the view of the field itself.

[20]The first title in the series is Joseph P. Martino, *An Introduction to Technological Forecasting*, The Futurist Library Vol. 1, published by Gordan and Breach, Inc., New York.

[21]Yehezkel Dror, *A Third Look at Futures Studies*, paper, Rome Special World Conference (1973); discussion extended in Dror, *Futures Studies-Quo Vadis?*, Human Futures, (Ibid)

ANALYSIS OF SURVEY RESPONSES

Any analysis of this type based on a mailed survey to a wide variety of institutions and individuals, in many countries, should obviously be qualified. For example:

a) Though it aggregates and compares responses to a number of questions, many of these responses are conditioned by the way in which the question is perceived. Differences in language and terminology may distort both the perception and the response.

b) Other discrepancies can also arise. One or more questions may be omitted in completing the survey form; a 'ranking' question may be checked off with no indication of rank order; where a positive or negative reply should condition the response to a further question, this may be missed.

Such discrepancies, where they occurred, have been compensated for in various ways, e.g. by having sufficient overlap in the question areas to augment inadequate replies, by adjustment from other parts of the given response data, and by weighting replies to impose uniformity for aggregate comparison.

Given these caveats, the analyses which follow should be considered as descriptive rather than, in any way, definitive. They may give some insights by affording a cross-sectional view of the survey, but they should not be taken beyond their obvious limitations.

In both cases, organizations and individuals were asked whether their activities were primarily focussed on futures studies or long range planning. If they were not primarily engaged in these areas, they were then asked if they considered that a significant part of their work was *substantively* concerned with the long term future.

These questions were posed so as to include those not formally defined as engaged in 'futures' work but whose activities were important in the wider concern with long range developments.

As both organizational and individual survey forms were used, there is a certain overlap in the response pattern of the latter. Some individuals replied from within their organizations. Other individuals responded entirely on their own behalf.

We will present the organizational analysis first, as this subsumes approximately forty percent of the individual response pattern—even where organizational and individual responses from the same source may be somewhat different.

ORGANIZATIONAL

The machine processed total under this category was 414. These were grouped under the following categories of given organization types.

Percentage Breakdown by Type of Organization

No. *	%		No.	%	
74	18	National governmental	5	1	International voluntary association
39	9	International governmental	1	0	National professional organization
25	6	International non-governmental	10	2	International professional organization
30	7	Industry	3	1	Trade union
19	5	Business	60	15	Independent research center
86	21	Academic center	13	3	Membership society
4	1	Commission/advisory group	4	1	ad hoc study group
8	2	National voluntary association	31	8	Other than above

* Number of organizations responding.

Examples of the above types would be:

A: NATIONAL GOVERNMENTAL
National Research Council of Canada

B: INTERNATIONAL GOVERNMENTAL
International Insitutute for Labor Studies, Switzerland

C: INTERNATIONAL NON-GOVERNMENTAL
International Council of Monuments and Sites, France

D: INDUSTRY
Sperry Rand Corporation

E: BUSINESS
Sears, Roebuck and Company

F: ACADEMIC CENTER
Science Policy Research Unit, United Kingdom

G: COMMISSION/ADVISORY GROUP
Puget Sound Governmental Conference

H: NATIONAL VOLUNTARY ASSOCIATION
Future Shape of Technology Foundation

I: INTERNATIONAL VOLUNTARY ASSOCIATION
Salzburg Assembly: Impact of the New Technology, Austria

J: NATIONAL PROFESSIONAL ORGANIZATION
Institute of Legal Medicine, France

K: INTERNATIONAL PROFESSIONAL ORGANIZATION
International Center of Methodology for Future and Development Studies, Romania

L: TRADE UNION
World Federation of Agricultural Workers, Belgium

M: INDEPENDENT RESEARCH CENTER
Battelle Institute (in various countries)

N: MEMBERSHIP SOCIETY
Zero Population Growth, U.S.A.

O: AD HOC STUDY GROUP
Stensen Institute Teilhard de Chardin Center for Studies and Research, Italy

OTHER(S) CATEGORY
Arthur D. Little Inc. "Consultants", U.S.A.

Of these, 57% were institutions primarily engaged in futures studies and/or long range planning:

Futures Studies—12%
Long Range Planning—11%
Both of the above—34% (Total 57%)

The remaining institutions broke down as follows. 43% were not primarily engaged in futures work or long range planning as such but were involved substantively with long term future concerns in various ways. A further 10% were uncertain as to either question but had some long term perspective commitments. Examples of this latter category would be a Center for Oceanic Studies, or an organization working on geological resources.

Those institutions primarily engaged, in various ways, with futures and long range planning activities were distributed as follows as a sub-sample of the overall set of organizations.

	Future Studies	Long Range Planning	Both of These	Total
National Governmental	8	13	27	74
International Governmental	2	4	7	39
Industry	2	2	11	30
Business	1	6	8	19
Academic Center	12	8	29	86
Independent Research Center	8	3	24	60

This sub-sample does not obviously include all such organizations, nor would those included necessarily have 'futures' and 'long range planning' in the formal title of the institution. It merely confirms what we would know tacitly, that most organized activity in the futures field tends to overlap with long range planning.

The particular kind of overlap and the specific degree of linkage remains problematic. For example, we do not know much about the actual influence of future studies on short term policy planning and decision making even where this may affect long range events or have longer term consequences.

RANGE OF WORK

This question was offered as a choice of:

Short range: 5-10 years
Medium range: 10-25 years
Long range: beyond year 2000

In terms of overall totals, response was allocated as follows:

173 were more concerned with the short range.
162 were oriented more towards the medium range.
55 were focussed mostly on the long range.
24 did not answer this question.

The major pattern of responses for the different types of organizations may be displayed in the following manner:

	Total	Range		
		Short	Medium	Long
National Governmental	74	26	34	12
International Governmental	39	19	15	3
Industry	30	19	9	1
Business	19	10	6	2
Academic Center	86	32	38	11
Independent Research Center	60	23	21	13

*Sub-sample of six major types of organizations.

Industry and business appear to be more concerned with the short range future; national governmental organizations oriented more towards the medium range. The longer range emphasis is shared mainly between national governmental, academic and independent research center.

ORIENTATION OF WORK BEING DONE

The given categories for ranking here were forecasting, research and planning. These overlap considerably in actual practice—both research and planning may contain elements of forecasting; research on long term concerns, obviously, includes a certain amount of forecasting: planning would necessarily encompass forecasting and research activities. Our objective was to elicit a priority ranking for specific topics so as to review the emphasis placed on various work directions.

The overall distribution of emphasis between the given categories for all organizations was fairly even.

Forecasting	Research	Planning
59%	57%	56%

Where forecasting has a slight edge this is accounted for by the emphasis on technological and economic forecasting by various governmental and corporate organizations. As may be seen in more detail in the tables below, this technological emphasis also runs through various other orientations. For example, research on the social impacts of technology includes technology assessment or vice versa. Much forecasting in the scientific, environmental and military areas includes technological components.

The tables give both the ranked order of topic areas, with 1 as highest rank, and the percentage of organizations ranking this topic as of first order.

Other priorities in work direction may be discerned in the table above. The overall ranking, however, should be qualified by various internal factors—size of organization represented, level of funding and so on. Military forecasting and planning may rank low, given the range of institutions surveyed, but the size and funding level of those organizations actually doing such work might far outweigh many others.

There are other anomalies which bear upon the fuzzy linkage between futures studies and policy planning. For example, social forecasting and social planning rank high but research into social priorities is relatively low. Likewise, high priority is accorded research into alternative futures but value systems, which one might assume is a significant component of this, is given much lesser priority.

More detailed cross comparison of the type of organization with orientation of work may be found in the appendix to this section.

The latter contains a cross comparison of types of organization and primary work direction which indicates other areas of emphasis. For example:

(i) **In forecasting**

National governmental organizations and independent research centers tend to emphasize economic forecasting, the latter centers receiving funds from the government for this particular area of work. Academic centers tend to rank technological, economic and social forecasting in that order.

(ii) **In research**

The major emphases were a little different. National governmental types and academic cen-

Rank	Forecasting	%	Rank	Research	%	Rank	Planning	%
1	Economic	14.2	1	Alternative futures	11.2	1	Social	11.2
2	Social	13.3	2	Social impacts of technology	10.9	2	Economic	10.5
3	Technological	11.2	3	Resource utilization	10.2	3	Technological	10.2
4	Resources	9.7	4	Policy research	9.9	4	Environmental	8.7
5	Environmental	9.6	5	Environmental	9.5	5	Urban	8.5
6	Educational	7.5	6	Futures methodology	8.9	6	Regional	8.3
7	Population	7.5	7	Social priorities	8.5	7	Educational	8.2
8	Scientific	6.0	8	Value systems	6.7	8	Resources	7.5
9	Manpower	5.6	9	Population	5.2	9	Corporate	7.4
10	Cultural	5.0	10	Manpower	4.8	10	Scientific	6.8
11	Market	5.0	11	The individual in the future	4.8	11	Political	5.4
12	Military	1.7	12	The family in the future	3.7	12	Labor	3.1
13	Other	3.7	13	Consumer affairs	2.4	13	Military	1.9
			14	Other	3.4	14	Other	2.3

ters ranked social impacts of technology high; the independent research centers indicated alternative futures and policy research for priority attention.

(iii) **In planning:**

One obvious item was corporate planning in the industry/business category. National governmental institutions favored scientific and social planning in that order; academic centers, social planning and a number of independent research centers were primarily concerned with urban planning.

FACTORS INFLUENCING THE DIRECTION OF WORK

These were ranked overall in the following order:

Organizational goals	— 22.8%
Concern for new developments	— 19.7
Professional interests	— 17.8
Personal staff interests	— 13.5
Funding	— 10.7
Commercial interests	— 6.3
Other concerns (unspecified)	— 9.2

The first two are rather ambiguous without reference to the organization's major fields of interest. This may be done by checking specific organizations as they are listed at the end of the report. In general, the type of organization correlated closely with the profile ranking as given.[22] National governmental institutions were most influenced by their given organizational goals; corporate and other types by new developments and commercial interest. Academic and independent research centers were more influenced by the professional and personal directions of their staff.

METHODS USED

Seventeen methodological approaches were selected as most representative from the range of ongoing work in the field. No one method would be used exclusively and those that are used, vary from task to task, and to a certain extent by type of institution. For example, a commission or advisory group would rate 'expert panels' more highly than an academic center whose staff and facilities might allow them to use probabilistic forecasting methods or cross impact analyses.

The first table here gives an overall view of methods by percentage.

Expert panels	**10.0%**	**Delphi techniques**	**5.5%**
Extrapolation techniques	**8.8**	**Operational models**	**5.1**
Individual 'expert' forecasting	**8.7**	**Cross impact analysis**	**3.9**
Statistical models	**8.4**	**Causal modelling**	**3.9**
Brainstorming	**8.1**	**Network analysis**	**2.8**
Scenario building	**7.9**	**Relevance trees**	**2.4**
Simulation	**6.2**	**Gaming**	**2.3**
Historical analogy	**5.9**	**Contextual mapping**	**2.1**
Probabilistic forecasting	**5.8**	**Others**	**2.4**

The percentage above is based on the weight of ranking given to each method. For example, if the respondent ranked 10 choices, his 1st ranking was given a weight of 10; his 2nd was given a weight of 9; his 3rd a weight of 8, etc. These weights were aggregated and assigned percentages in terms of their weight.

This end percentage figure may tell us about the overall ranking of all the organizations taken together but for a more detailed perspective on *how* various organizations ranked specific methods, we should refer to the accompanying full page table C.T. (1-12). This gives the actual numbers allocated by the organizations first rank of method and shows the highest ranking as probabilistic forecasting as used by national governmental and academic centers.

For a more detailed cross comparison of methods used in relation to forecasting activities, see table C.T. (7-12) in the cross-comparison appendix. This compares ranked 'forecasting' activities with the first rank of methods used. For example, in technological forecasting, the top ranked method is probabilistic forecasting; in economic forecasting, this also ranked high plus statistical methods. In social forecasting there is a preference for scenario building and in scientific forecasting, expert panels were ranked highest.

[22] See #C.T. (1-11) in the cross-comparison appendix.

TABLE C.T. (1 - 12)

METHODS RELATIVE TO ORGANIZATIONS

	No answer	a. Probabilistic forecasting	b. Delphi techniques	c. Gaming	d. Cross impact analysis	e. Scenario building	f. Extrapolation techniques	g. Contextual mapping	h. Brainstorming	i. Statistical models	j. Expert panels	k. Relevance trees	l. Network analysis	m. Historical analogy	n. Operational models	o. Individual 'expert' forecasting	p. Simulation	q. Causal modelling	r. Other	ROW TOTALS
a. National governmental	5	14	3	0	2	3	7	0	2	3	8	0	0	1	1	5	4	4	5	67
b. International governmental	3	8	2	0	1	1	5	0	4	5	2	0	0	0	1	0	3	0	3	36
c. International non-governmental	1	2	1	0	1	2	3	0	2	2	7	0	0	0	1	1	1	0	1	26
d. Industry	2	2	3	1	1	1	3	0	5	3	3	0	0	1	1	3	0	0	1	30
e. Business	2	6	1	0	0	[illegible]	2	0	0	1	1	0	0	0	0	1	0	2	1	19
f. Academic center	9	10	2	2	4	6	5	0	7	8	14	0	2	0	0	7	3	1	4	84
g. Commission/advisory group	1	1	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	4
h. National voluntary association	1	1	0	0	0	0	0	0	0	1	5	0	0	0	0	0	0	0	0	8
i. International voluntary association	0	0	0	0	0	0	2	1	0	0	1	0	0	0	0	1	0	0	0	5
j. National professional organization	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
k. International professional organization	1	2	1	0	0	1	0	0	1	1	1	0	0	0	0	1	1	0	0	10
l. Trade union	0	0	0	0	0	0	1	0	1	1	0	0	0	0	0	0	0	0	0	3
m. Independent research center	4	9	3	0	2	6	6	1	5	8	2	1	0	1	0	3	3	1	3	58
n. Membership society	2	1	2	1	0	0	1	0	1	1	0	0	0	1	1	0	1	0	0	12
o. ad hoc study group	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	1	4
p. Other	7	2	1	1	1	3	4	1	0	4	0	0	0	0	1	3	0	0	2	30
COLUMN TOTALS	38	58	20	5	13	25	39	3	29	40	46	1	2	4	7	25	16	8	21	

* N.B Numbers given are actual numbers allocated to a specific method by the organizations first rank choice, e.g. 10 academic centers listed probabilistic forecasting as their number one ranked method.
Based on sub-sample of 400 organizations.

In planning work, the method most often used was probabilistic forecasting—economic planning particularly. The use of 'expert panels' was ranked highest in technological planning; thereafter 'statistical models' was given most often.[23]

ANNUAL FUNDING

This varied greatly over the range of figures and the response spectrum of the organizations. 16% declined to answer this question: other responses are given in the table below.

6 %	Less than $1,000
9	$ 1,000 - $ 10,000
9	$ 11,000 - $ 30,000
8	$ 31,000 - $ 50,000
11	$ 51,000 - $ 100,000
16	$101,000 - $ 300,000
7	$301,000 - $ 500,000
7	$501,000 - $1,000,000
12	Over $1,000,000

We should recall here that we are dealing with a variety of organizations, from small academic and voluntary centers up to large governmental and international agencies. Where the table shows 12 organizations with annual budgets in excess of one million dollars one would tend to interpret this rather soberly. In some cases this may be a large research organization which has many other kinds of activities ongoing as well as the future oriented components which we are surveying.

INSTITUTIONAL LINKAGE

The primary relationship examined here was *support*, i.e. from where organizations received their funds.

The survey is weak in this area as many organizations declined to answer this question or marked it as confidential information. With this degree of variability no useful quantifiable analysis could be made other than the incomplete ranges given.

In terms of such support as given, the overall profile is as follows:

- 219 received some part of their funds from National governments.
- 116 received some part of their funds from Private business.
- 84 received some part of their funds from Foundations.
- 64 received some part of their funds from International agencies.
- 59 received some part of their funds from Local governments.
- 81 reported major support from 'own resources', (e.g. university centers) in addition to the above sources and others unspecified.

The support range was broken down into percentages to give a clearer picture. This showed that 93 organizations received almost all their support (80-100%) from national governments; 37 almost all support (80-100%) from private business, including those internal to business itself; 8 organizations showed 50-59% support from national government.

Percentage of Institution's Time Spent in Futures Studies and/or Long Range Planning for Various Organizations

%	0-9	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-100	Row Total
Local government	27	17	8	6	11	0	1	2	1	2	75
National government	30	17	22	12	22	9	6	10	10	57	195
International agencies	32	9	7	4	6	0	2	2	0	13	75
Private business	22	9	10	6	11	2	4	6	3	32	105
Foundations	20	9	4	3	1	0	0	1	0	1	39
Voluntary associations	18	8	4	0	2	0	0	3	1	4	40
Other	11	7	3	3	2	5	3	4	2	40	80

Time Spent in Various 'Futures' Activities

The table shows, for example, that 195 organizations in the 'row total' column spent various proportions of time in work for national governments: 57 of these spent 90-100% so doing: 30 at the other extreme end spent only 0-9% of their time in this fashion.

32 organizations spent 90-100% of their time for private business and at the lower range 22 spent 0-9% in this sector.

[23]For more extended discussion of methodology see the *methods used* part of the individual response analysis.

Finding support and 'time spent' are not always directly correlated except in obvious cases where institutions are internally funded by their support sector, e.g. government agencies, corporate long range planning centers. Other support and time relations are more indirect—foundations rank third in terms of supporting sector but are about sixth rank according to time spent working directly for them i.e. they give grants for activities which are not directly in their own service.

PERSONAL CHARACTERISTICS

A. Work Force Numbers

These are given *as reported*, but need more acute appraisal as many large organizations reported their total work force—all of whom may not be engaged in futures work or long range planning activities.

Full time workers — 7,964
Part time workers — 5,901

In terms of how these are disposed organizationally the following summary may help.

Number of persons employed	1 - 9	10 - 49	50 - 99	100 - 499	500 - 6999	
Number of organizations	159	68	9	10	3	Part Time
	151	86	12	12	2	Full Time

From the table we may note that 159 organizations at the left 'lower' end employed from 1-9 persons part time and 151, 1-9 full time workers. Respectively 3 and 2 organizations reported between 500-7,000 persons either part time or full time.

From general knowledge of the field one would tend to say that the high numbers are *not* wholly representative of a 'futures' work force. The average size future studies organization would run from 5-50 full time persons. The few larger future studies and long range planning organizations might run from 100 to 200 full time persons plus part time workers or consultants on large Delphi type projects.

B. Sex Range

Ten percent did not reply to this question. Of the organizations which did, the response pattern is as follows:

25% — employed no women
51% — employed a greater proportion of men than women
9% — employed an equal proportion of men and women
5% — employed a greater proportion of women than men

It is likely that many of the organizations whose memberships included a good proportion of females included all service and support personnel. On the whole the field is rather exclusively male dominated.

C. Age Range

Some respondents listed both part time and full time workers in the age categories so the overall number is higher than the total work force figure. It is useful, however, in indicating the age range concentration.

Working in the Field

506 less than 25 years old
1290 between 25-29
3076 between 30-39
1970 between 40-49
999 between 50-59
287 between 60 or over

The largest grouping is between 30 and 50 years old. This would accord in overall profile with the educational level data which follows below. The field tends to be characterized by professionals who have completed their education in some other area and then moved into futures.

D. Educational Level

Some respondents may have reported *all* de-

grees of each person in their organizations. The figures should be interpreted with some reservation—but the 'profile' is close.

Attended some college	— 1066
Bachelor's degree	— 3112
Master's degree	— 3849
Doctoral degree	— 3051
Other graduate or professional degree	— 749

E. Fields of Formal Training

These have been rank ordered below as given, and the percentage of the totals included. 6.9% respondents did not answer this question.

Rank Order	Field	%	Rank Order	Field	%
1	Social/behavioral sciences	22.9	7	Law	5.1
2	Engineering	13.6	8	Life sciences (includes medicine)	4.8
3	Physical sciences	11.7	9	Design (includes environmental and industrial design, city and regional planning)	4.7
4	Mathematics (includes computer/information sciences)	11.2	10	Journalism	1.9
5	Humanities	7.6	11	Cinema/television	1.3
6	Education	7.2	12	Arts (includes studio and performing)	1.1

The highest percentage of fields represented, is for social and behavioral sciences; the lowest, arts. If we combine, however, physical sciences and engineering (11.7% and 13.6% respectively) we get a preponderance of these at 25.3%. With life sciences, as including medicine, at 4.8% this could bring the 'scientific and technical' proportion above the social behavioral and humanities profile. Traditionally the field has largely drawn upon the 'hard' sciences and technologists, and the more recent infusion of social scientists, and others, has not yet balanced this out.

The relatively high position of law in the organizational response may be accounted for by the large scale organizational and corporate activities represented. The *individuals'* response pattern will give a somewhat different picture.

The high ranking for mathematics (including computer and information sciences) coincides with the growth in popularity of computer use in the field, and the development of specific forecasting and modelling techniques.

The profile of disciplines represented in the field of future studies and long range planning may be better gauged by reference to the individual response analysis which follows. Many of the key workers in the field are not necessarily identified with specific organizations. They may operate from university and other bases, and carry out their work as individual consultants or in other modes.

TABLE C.T. (1 - 7)

CROSS COMPARISON OF ORGANIZATIONS WITH AREAS OF FORECASTING

Orgs.	Forecasting Areas No answer	a. Technological	b. Economic	c. Social	d. Cultural	e. Market	f. Educational	g. Scientific	h. Environmental	i. Military	j. Manpower	k. Resources	l. Population	m. Other	ROW TOTALS
No answer	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2
a. National governmental	26	8	10	8	0	0	4	3	2	1	0	1	2	2	67
b. International governmental	18	4	6	2	0	3	1	2	1	1	1	0	0	0	38
c. International non-governmental	7	7	4	0	0	0	1	1	0	0	0	0	0	4	25
d. Industry	12	2	5	3	0	3	0	2	2	0	0	0	2	1	30
e. Business	6	2	4	2	0	1	1	0	2	0	0	0	0	1	19
f. Academic center	34	12	11	10	2	2	1	0	0	1	2	1	2	4	84
g. Commission/advisory group	1	1	0	1	0	0	0	0	0	0	0	0	0	1	4
h. National voluntary association	4	1	0	1	0	0	1	0	0	0	0	0	0	1	8
i. International voluntary association	0	3	1	0	0	0	0	0	0	0	0	1	0	0	5
j. National professional organization	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
k. International professional organization	5	3	0	1	0	0	1	0	0	0	0	0	0	0	10
l. Trade union	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3
m. Independent research center	25	6	11	6	0	0	3	2	2	0	0	1	2	0	58
n. Membership society	6	1	2	1	0	0	1	0	0	0	0	0	0	1	12
o. ad hoc study group	2	2	0	0	0	0	0	0	0	0	0	0	0	0	4
p. Other	12	7	1	4	1	1	0	0	0	1	1	2	0	0	30
TOTALS	164	59	55	39	3	10	14	10	9	4	4	6	8	15	400

N.B. Based on sub-sample of 400 organizations.

TABLE C.T. (1 - 8)

CROSS COMPARISON OF ORGANIZATIONS WITH AREAS OF RESEARCH

Orgs.	TOTALS	a.	b.	c.	d.	e.	f.	g.	h.	i.	j.	k.	l.	m.	n.	ROW TOTALS
Research Areas No answer	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
a. Social impacts of technology	29	8	4	3	0	5	4	0	4	3	1	2	0	2	2	67
b. Alternative futures	19	6	2	1	1	2	2	1	2	1	0	1	1	0	2	38
c. Manpower	8	4	1	1	1	1	1	1	2	4	1	0	0	0	2	25
d. Consumer affairs	17	3	3	2	0	1	1	0	2	0	1	0	0	0	0	30
e. Environmental	7	4	0	0	0	2	4	0	0	0	0	0	0	0	2	19
f. Resource utilization	30	16	8	3	2	4	2	4	4	5	1	1	1	1	2	84
g. Value systems	2	0	0	0	0	0	0	1	1	0	0	0	0	0	0	4
h. Social priorities	4	0	0	1	0	0	1	1	1	0	0	0	0	1	0	8
i. Policy research	1	0	2	0	0	0	1	0	0	0	0	0	0	0	0	5
j. Population	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1
k. The individual in the future	5	2	0	0	0	1	0	0	2	0	0	0	0	0	0	10
l. The family in the future	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	3
m. Futures methodology	24	6	9	3	0	2	1	0	1	9	1	1	0	1	0	58
n. Other	7	1	0	0	0	1	1	0	0	0	0	0	0	1	1	12
ROW TOTALS	2	1	0	0	0	1	0	0	0	0	0	0	0	0	0	4
TOTALS	170	58	35	14	3	20	19	7	18	25	4	5	2	8	12	400
	11	7	4	0	0	1	1	0	2	3	0	0	0	1	0	30

N.B. Based on sub-sample of 400 organizations.

TABLE C. T. (1 - 9)

CROSS COMPARISON OF ORGANIZATIONS WITH AREAS OF PLANNING

Orgs.	Planning Areas No answer	a. Scientific	b. Technological	c. Social	d. Urban	e. Regional	f. Educational	g. Economic	h. Political	i. Corporate	j. Environmental	k. Military	l. Labor	m. Resources	n. Other	ROW TOTALS
No answer	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
a. National governmental	33	7	6	7	1	1	3	2	0	2	1	1	0	2	1	67
b. International governmental	21	4	5	1	1	0	1	1	1	3	0	0	0	0	0	38
c. International non-governmental	8	3	3	3	0	1	1	1	2	0	0	0	0	0	3	25
d. Industry	13	4	4	0	1	0	0	0	0	7	0	0	0	0	1	30
e. Business	7	0	2	2	3	0	1	0	0	3	0	0	0	0	1	19
f. Academic center	32	6	3	9	5	2	3	5	4	5	5	2	1	1	1	84
g. Commission/advisory group	2	1	0	0	0	0	0	0	0	0	0	0	1	0	0	4
h. National voluntary association	5	1	1	1	0	0	0	0	0	0	0	0	0	0	0	8
i. International voluntary association	2	0	1	0	0	0	0	0	0	1	0	0	0	1	0	5
j. National professional organization	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
k. International professional organization	6	1	1	1	0	0	1	0	0	0	0	0	0	0	0	10
l. Trade union	2	0	0	0	0	0	1	0	0	0	0	0	0	0	0	3
m. Independent research center	23	2	3	4	7	3	3	3	0	4	2	0	1	2	1	58
n. Membership society	6	0	0	0	0	0	1	1	0	2	0	1	0	0	1	12
o. Ad hoc study group	2	0	1	0	0	1	0	0	0	0	0	0	0	0	0	4
p. Other	13	3	3	3	3	0	1	0	0	1	0	1	0	2	0	30
TOTALS	177	32	33	31	21	9	16	13	7	28	8	5	3	8	9	400

N.B. Based on sub-sample of 400 organizations.

TABLE C.T. (7 - 12)

CROSS COMPARISON OF FORECASTING AREA WITH TYPE OF METHOD USED (ORGANIZATIONAL)

Forecasting	No answer	a. Probabilistic forecasting	b. Delphi techniques	c. Gaming	d. Cross impact analysis	e. Scenario building	f. Extrapolation techniques	g. Contextual mapping	h. Brainstorming	i. Statistical models	j. Expert panels	k. Relevance trees	l. Network analysis	m. Historical analogy	n. Operational models	o. Individual 'expert' forecasting	p. Simulation	q. Causal modelling	r. Other	ROW TOTALS
No answer	26	18	6	1	7	5	12	0	15	17	22	0	0	2	4	10	8	2	10	165
a. Technological	3	19	6	0	3	4	8	0	3	1	5	0	0	1	1	2	2	0	1	59
b. Economic	0	11	6	0	2	4	7	0	1	12	3	0	0	0	0	2	2	3	2	55
c. Social	2	3	1	2	0	6	3	0	4	3	4	1	1	1	1	5	1	0	0	38
d. Cultural	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	2
e. Market	1	1	0	0	0	1	1	0	2	1	1	0	0	0	0	0	0	1	1	10
f. Educational	1	2	0	0	0	2	0	1	1	3	1	0	0	0	0	2	0	1	1	15
g. Scientific	1	0	0	0	0	0	1	0	2	0	5	0	0	0	0	1	0	0	0	10
h. Environmental	1	2	0	0	0	2	0	0	1	1	1	0	0	0	0	0	1	0	0	9
i. Military	0	0	0	0	0	0	2	0	0	1	0	0	0	0	0	1	0	0	0	4
j. Manpower	1	0	0	0	0	0	2	0	0	0	0	0	1	0	0	0	0	0	0	4
k. Resources	1	0	0	0	0	1	0	1	0	1	0	0	0	0	0	0	1	1	0	6
l. Population	1	1	0	0	0	0	1	0	0	1	0	0	0	0	0	2	0	0	2	8
m. Other	0	1	1	2	1	0	2	0	1	0	3	0	0	0	1	0	1	0	2	15
TOTALS	38	58	20	5	13	25	39	3	30	41	46	1	2	4	7	25	16	8	19	400

N.B. Based on sub-sample of 400 organizations.

TABLE C.T. (2 - 23)

CROSS COMPARISON OF FUTURES ORGANIZATIONS WITH EMPLOYEES MAJOR FIELD OF TRAINING

	No answer	a. Physical sciences	b. Life sciences (includes medicine)	c. Social/behavioral sciences	d. Humanities	e. Mathematics (includes computer/ information sciences)	f. Engineering	g. Journalism	h. Education	i. Design (includes environmental and industrial design, city and regional planning	j. Arts (includes studio and performing)	k. Cinema/television	l. Law	m. Other	ROW TOTALS
No answer	14	37	6	67	7	5	20	1	7	1	0	0	2	9	176
a. Futures studies	5	10	1	14	4	1	10	0	1	4	0	0	0	1	51
b. Long range planning	3	4	1	23	2	1	2	1	0	1	0	0	1	6	45
c. Both futures studies and long range planning	17	22	8	54	3	6	9	1	3	5	1	0	2	11	142
TOTALS	39	73	16	158	16	13	41	3	11	11	1	0	5	27	414

QUESTION: How are organizations that are primarily engaged in futures studies and/or long range planning cross related to employees major field of training?

The table shows that, for example, 158 organizations in the 'totals' column said that most of their employees major field of training was social/behavioral sciences. 51 organizations were engaged primarily in futures studies,'row totals' column, out of that 51, 14 indicated that the major formal training of their employees was in social/behavioral sciences. The Table shows there was a lack of organizations (4) engaged in long range planning that had employees engaged in physical sciences when compared to futures studies and both.

TABLE C.T. (13 - 17)

CROSS COMPARISON OF FUNDING RELATED TO TIME RANGE OF WORK (ORGANIZATIONAL)

	No answers	a. Less than $1,000	b. $ 1,000 - $ 10,000	c. $ 11,000 - $ 30,000	d. $ 31,000 - $ 50,000	e. $ 51,000 - $ 100,000	f. $101,000 - $ 300,000	g. $301,000 - $ 500,000	h. $501,000 - $1,000,000	i. Over $1,000,000	ROW TOTALS
No answer	10	1	4	3	0	3	2	0	0	1	24
a. Short range (5 - 10 years)	29	12	19	20	14	19	24	8	9	19	173
b. Medium range (10 - 25 years)	19	9	11	12	11	21	34	11	10	24	162
c. Long range (beyond year 2000)	7	1	2	4	6	4	7	8	10	6	55
TOTALS	65	23	36	39	31	47	67	27	29	50	414

QUESTION: How is funding cross related to time range of the organizations futures studies and/or long range planning?

The table shows that 173 and 162 organizations in the 'row totals' column have short range and medium range respectively futures studies and/or long range planning. 24 of the organizations with medium futures studies or long range planning get over $1 million in funding. 34 of this medium range group gets between $101,000 and $300,000. 24 organizations in the short range group get from $101,000 to $300,000. In fact, the most common funding range was $101,000 (67), medium range futures studies and/or long range planning also had the highest number of organizations in the funding ranges of $301,000 to $500,000 (11) and $500,000 to $1,000,000 (10).

CROSS COMPARISON: NORTH AMERICAN AND EUROPEAN REGIONS (ORGANIZATIONAL)

ORIENTATION OF WORK: NORTH AMERICA REGION

Rank	Forecasting	%	Rank	Research	%	Rank	Planning	%
1	Economic	14.1	1	Alternative futures	13.4	1	Technological	12.5
2	Social	13.4	2	Policy research	11.4	2	Corporate	11.4
3	Technological	13.1	3	Resource utilization	11.2	3	Economic	11.0
4	Resources	10.2	4	Social impacts of technology	10.3	4	Social	10.9
5	Environmental	8.2	5	Futures methodology	8.4	5	Resources	8.3
6	Educational	6.9	6	Social priorities	7.9	6	Educational	7.8
7	Market	6.1	7	Value systems	7.4	7	Scientific	7.1
8	Scientific	6.1	8	Environmental	6.9	8	Urban	6.8
9	Population	5.9	9	The individual in the future	5.8	9	Environmental	6.5
10	Manpower	5.1	10	Population	4.0	10	Regional	6.0
11	Cultural	4.7	11	The family in the future	3.9	11	Political	5.3
12	Military	3.2	12	Manpower	3.6	12	Military	3.6
13	Other	3.0	13	Consumer affairs	2.5	13	Labor	1.4
			14	Other	3.2	14	Other	1.4

ORIENTATION OF WORK: EUROPEAN REGION

Rank	Forecasting	%	Rank	Research	%	Rank	Planning	%
1	Economic	13.7	1	Environmental	10.9	1	Social	10.9
2	Social	13.6	2	Social impacts of technology	10.9	2	Environmental	10.3
3	Environmental	10.9	3	Alternative futures	9.9	3	Regional	10.1
4	Technological	10.0	4	Futures methodology	9.3	4	Urban	10.1
5	Resources	9.6	5	Social priorities	9.2	5	Economic	9.9
6	Population	8.5	6	Resource utilization	9.1	6	Technological	8.8
7	Educational	7.7	7	Policy research	8.6	7	Educational	8.2
8	Scientific	6.3	8	Value systems	6.8	8	Resources	7.1
9	Manpower	5.4	9	Population	5.7	9	Scientific	6.8
10	Cultural	5.0	10	Manpower	5.0	10	Political	5.5
11	Market	3.9	11	The individual in the future	4.7	11	Corporate	4.5
12	Military	.8	12	The family in the future	3.8	12	Labor	4.2
13	Other	4.6	13	Consumer affairs	2.6	13	Military	.7
			14	Other	3.4	14	Other	3.0

CROSS COMPARISON: NORTH AMERICAN AND EUROPEAN REGIONS (ORGANIZATIONAL)

ORGANIZATIONAL RANKING: NORTH AMERICA REGION (159 Respondents)

Rank		%	Rank		%
1	Academic center	22.0	8	Membership society	3.1
2	National government	14.5	9	Commission/advisory group	2.5
3	Industry	11.9	10	National voluntary association	1.3
4	Independent research center	10.1	11	International voluntary association	.6
5	Business	9.4	12	National professional organization	.6
6	International governmental	7.5	13	International professional organization	.6
7	International non-governmental	3.1	14	ad hoc study group	.6
			15	Other	11.9
			16	Trade union	0

ORGANIZATIONAL RANKING: EUROPEAN REGION (217 Respondents)

Rank		%	Rank		%
1	National governmental	21.7	8	National voluntary association	2.8
2	Academic center	19.8	9	International professional organization	2.8
3	Independent research center	17.5	10	Business	1.4
4	International governmental	10.1	11	International voluntary association	1.4
5	International non-governmental	8.3	12	Trade union	.9
6	Industry	4.6	13	ad hoc study group	.9
7	Membership society	3.2	14	Other	3.7
			15	Commission/advisory group	0
			16	National professional organisation	0

RANGE OF WORK: NORTH AMERICA REGION

Rank		%
1	Short range (5 - 10 years)	45.9
2	Medium range (10 - 25 years)	37.1
3	Long range (beyond year 2000)	11.9
	No answer	5.0

RANGE OF WORK: EUROPEAN REGION

Rank		%
1	Medium range (10 - 25 years)	43.3
2	Short range (5 - 10 years)	35.5
3	Long range (beyond year 2000)	15.7
	No answer	5.5

INDIVIDUAL

The number of respondents whose individual returns were machine processed is 512. Of these 254 responded on their own behalf, as detached from institutional linkage; 258 replied as part of their organization's response.

PERSONAL DATA

A. Sex

93% are men; 7% women.

This is a clearer picture than the organizational one, as persons at work in the field are responding as individuals, without the distortion of the support staff, etc., of the earlier analysis.

B. Age Range

The main concentration is in the 30-49 age group, most specifically in the group from 40-49 years.

C. Educational Level

Over half of the individuals are at the doctoral degree level. This is not necessarily indicative of strength of contribution to the field, leadership and innovation.

Educational Level

	Some College or Less	Bachelor's Degree	Master's Degree	Doctoral Degree	Other Graduate/ Professional Degree
% of Individuals	2.0	13.0	20.0	54.0	10.0

N.B. 1.0% did not answer in this category.

Many of the key contributors do not have the doctoral degree. Some have the master's, others do not go beyond the bachelor's. This is in part due to the relatively recent growth of the futures field and its subsequent attainment of quasi-academic respectability.

D. Major Formal Training

The percentages displayed are based on the weight of ranking assigned by individuals, where they ranked one or more fields.

Field	%
Social/behavioral sciences	29.3
Engineering	12.1
Humanities	10.5
Physical sciences	10.4
Mathematics	5.9
Education	5.9
Life sciences (includes medicine)	4.9
Law	3.7
Design (includes environmental and industrial design, city and regional planning)	3.5
Journalism	1.9
Arts (includes studio and performing)	1.1
Cinema/television	0.5
Other(s) N.B. large number specified economics as not on list	10.3

Compared with the organizational response, there is a more equable balance between the social sciences and the physical sciences/engineering/life sciences grouping.

The involvement of the arts and design fields remains relatively low but this might change rapidly as more practitioners in these fields are beginning to speculate on the future of particular art forms. Typically, of course, much of this speculation has been generated at the new interfaces of technology and the arts. The emergence of video-art, electronic music, computer graphics and other forms has assisted in opening up the dialogue.

The relative low percentage rating of city and regional planners may be due to the peculiarity of the sample. Urban design, for example, has been one of the most fruitful sources of futures imagery.

E. Informal Training

As almost all of the persons working in the 'futures' field have come from other disciplines, and as the field itself encourages the exploration of other disciplines, the informal training profile may be of interest here.

Informal Training

Field	%	Field	%
Social/behavioral sciences	19.3	Design (includes environmental and industrial design, city and regional planning)	5.2
Education	16.2		
Humanities	9.3	Life sciences (includes medicine)	4.5
Journalism	8.1	Arts (includes studio and performing)	4.3
Mathematics	7.2	Cinema/television	3.2
Engineering	5.9	Law	2.6
Physical sciences	5.6	Other(s) N.B. others such as economics above	8.4

Informal is taken as meaning those kinds of training or immersion in other fields via work experience and personal interest. We may note, on comparing this with the 'formal training' table, that the disciplinary spread is wider.

One explanation for this may be that many of the physical scientists, engineers and mathematicians engaging in futures work find that they are required, by the field interest, to broaden their perspectives in the social areas. Whether the pattern will hold in reverse, as more social scientists become engaged with futures work, is difficult to say.

F. Primary Engagement with Futures Studies and Long Range Planning

About three quarters of those responding are primarily working in futures and long range planning. The remainder are not so primarily engaged but various aspects of their work are concerned with the long term or with the future consequences and implications of their field interest.

	% of total respondents
Futures Studies	21%
Long Range Planning	13%
Both of the above	39%
Not primarily engaged	27%

G. Length of Time Spent in Futures Work

This question of how long respondents had been working in futures work was asked to shed some light on the growth of the field.

Length of Time in Field	Under 1 Year	1 - 2	2 - 3	4 - 5	6 - 10	10+
% of Persons	2.0	4.0	9.0	18.0	17.0	26.0

* The 24 percent 'no answer' here matches closely with the number of those 'not primarily engaged' in the preceding question.

About 33 percent had entered the field within the past five years: 50 percent within the past ten years. This matches the growth of interest in longer term prospects of the larger soc-

iety; also it parallels the development of new areas such as technology assessment, social indicators and longer range environmental policies. The 'new' areas were present earlier but their formal adoption awaited various official policy decisions.

H. Percentage of Time Spent in Futures Organizations

Where many respondents may also be engaged in other types of work, we tried to elicit a profile of how much time was spent in specific futures and planning activities.

The array given below may be interpreted, in various ways, as representing the allocation of activities by individuals.

I. Direction of Work

These questions used the same range of categories as for organizations, so as to allow their cross-comparison.
(NB. The top rank is marked 1: the percentage is based on the weight of ranking given to each direction topic by the correspondent.)

Certain of these rankings may require qualifying, as was noted in dealing with the same question in the organizational analysis. Some of the lower ranking by an individual may have a much weightier rank in terms of investment by the organization for which he works. For example, the low rank of 11 for manpower forecasting might be indicated by a small number of respondents working for a large manpower forecasting agency.

% of Time Spent	1-9	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-100	Row Totals
In organization primarily concerned with futures studies and/or long range planning.	34	15	20	12	24	2	12	19	10	37	185
In organization concerned with other studies including long range planning.	23	20	13	10	16	2	3	4	4	16	111
As individual consultant.	75	34	24	3	8	2	3	7	1	4	161
In planning unit of a governmental agency.	28	11	5	4	4	2	0	1	5	16	76
In planning unit of a business enterprise.	14	5	5	1	4	4	1	3	2	24	63
In planning unit of an international organization.	24	12	6	6	5	0	3	6	2	10	74
As academic, in teaching futures studies or long range planning.	64	38	31	10	13	6	9	5	3	6	185

NB. Row totals on the extreme right show, for example, 185 individuals indicated the various %'s of their time spent in organisations primarily concerned with futures studies and/or long range planning, etc.

Where individuals indicated that they were *not* primarily engaged in futures studies and/or long range planning, they were asked to state what percentage of their time was so allocated.

Approximately half gave the following reply:

Nine percent spent 50% of their time.
Five percent spent 40% of their time.
Nine percent spent 30% of their time.
Ten percent spent 20% of their time.
Nine percent spent 10% of their time.
Seven percent spent under 10% of their time.

The more generalized emphasis on technological and economic forecasting, though somewhat similar to the organizational profile in the area, is probably a 'true' profile for the overall field.

J. Factors Influencing Work Direction

This was a rather oversimplified question. The categories were given as the same range in the organizational question. The individual responses are almost inversely related to the or-

Rank	Forecasting	%	Rank	Research	%	Rank	Planning	%
1	Social	16.8	1	Alternative futures	13.9	1	Social	12.1
2	Economic	14.5	2	Social impacts of technology	12.0	2	Technological	12.1
3	Technological	13.0	3	Value systems	9.7	3	Economic	10.4
4	Environmental	9.0	4	Policy research	9.5	4	Corporate	10.1
5	Resources	8.2	5	Futures methodology	9.5	5	Educational	8.8
6	Cultural	7.4	6	Social priorities	8.8	6	Environmental	8.2
7	Educational	6.1	7	Environmental	7.9	7	Scientific	7.3
8	Market	6.0	8	Resource utilization	7.8	8	Resources	6.9
9	Scientific	5.6	9	The individual in the future	6.0	9	Urban	6.5
10	Population	4.8	10	The family in the future	3.4	10	Regional	6.2
11	Manpower	3.1	11	Population	3.3	11	Political	6.2
12	Military	1.5	12	Manpower	2.9	12	Military	1.2
13	Other	4.1	13	Consumer affairs	1.8	13	Labor	1.1
			14	Other	3.5	14	Other	2.9

ganizational replies. As might be expected, personal interest considerably outweighed other factors.

Rank	Factors	%
1	Personal interest	30.2
2	Professional interests	23.8
3	Organizational goals	19.9
4	Funding	7.3
5	Available time	6.8
6	Job description	4.2
7	Other	3.3

Again, interpretation of such data should be balanced by the character of sample. Almost half of the persons responding were doing so as individuals with a strong interest in the field itself, in some cases, quite apart from their institutional linkage.

K. Methods Used

This profile may be skewed by the 'individual' nature of the respondent selection and conceals a great deal of variation.

For example, there was variation generated by the variety of rankings used by respondents. Some ranked all the methods in simple order: some checkmarked those of interest only: some ranked one group as first, another group as second rank and so on. The percentage is based, therefore, on the weight assigned via the number of choices ranked: if five methods were ranked in order, the first was given a weight of 5, and so on. This reduces the validity of the aggregate percentage accorded each method in the table.

However, one can comment on the given figures from knowledge of the field. Many individual workers do tend to use extrapolative scenarios aided, in some cases, by their 'individual expert forecasting'.

A good deal of the literature generated is of this order, and may indicate weakness or strength according to one's personal viewpoint—and the knowledge and imaginative range

Rank	Method	%	Rank	Method	%
1	Scenario building	10.6	10	Delphi techniques	5.6
2	Extrapolation techniques	8.5	11	Operational models	4.4
3	Individual 'expert' forecasting	8.2	12	Causal modelling	4.1
4	Expert panels	8.0	13	Cross impact analysis	3.9
5	Historical analogy	7.7	14	Network analysis	2.7
6	Brainstorming	7.6	15	Relevance trees	2.5
7	Statistical models	6.5	16	Gaming	2.5
8	Probabilistic forecasting	5.9	17	Contextual mapping	2.4
9	Simulation	5.6	18	Other	3.4

of the contribution. Others use a variety of more sophisticated techniques which yield narrower, and more qualified, futures studies of some specific topic area.

Many of the lower ranked techniques such as contextual mapping, network analysis and relevance trees, tend to shade off into more specialized sub-fields like technological forecasting and product marketing.

There is no substantial body of agreement on the methodology appropriate to any particular type of futures study, and there is no one method capable of handling the level of multivariate analyses required by the range of complexly interacting factors in 'whole society' studies. The recent developments in multivariate global modelling show promise here, but they are admittedly primitive despite the relative sophistication of their methodology.

L. Time Range of Work

This may be presented most simply in terms of individual response by the following percentage table.

Range	%
Short range (5 - 10 years)	32
Medium range (10 - 25 years)	45
Long range (beyond 2000)	17
No answer by respondent	6

We may contrast this with the aggregate organizational profile in which most concentration was on the short range and correspondingly less as the range lengthened.

This accords with the development of the field. Early individual and informal group work, a decade or so ago, typically focussed on the symbolic year 2000. As 'futures' and long range concerns have been more recently adopted by organizations, they are still somewhat constrained by shorter range perspectives. This may be mandated by the locus of a governmental organization, for example, in manpower forecasting or as in corporate planning by the shorter range of immediate managerial constraints.

M. Institutional Linkage

The support link was considered primary here and the table below shows the percentage of support by various agencies.

The table may be read in the following way. For example, 200 individuals in the row totals column indicate various percentages of support from their national government. Approximately half receive up to 50% of their support from this source and, of the remainder 66 receive 100%.

% of Support	1-9	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-100	Row Totals
Local government	18	11	6	4	6	1	0	4	1	8	59
National government	29	17	13	8	26	7	11	16	7	66	200
International agencies	17	14	7	2	7	3	1	3	4	17	75
Private business	20	16	13	1	13	4	2	8	5	65	147
Foundations	25	17	11	6	15	1	2	3	0	8	88
Voluntary associations	20	5	6	2	7	0	1	1	1	7	128

The picture of support is, of course, obscured by the fact that most individuals are working in some institutional setting where direct funding may not be given for their futures work but for some other activity. In these cases their interests are supported indirectly. Many individuals are also reporting from inside the organizational sources listed and are thus supported by them for such work to varying degrees.

This line of interpretation is aided by considering the response pattern, below, of time spent in working for various organizations.

N. Time Spent in Futures Activities for Various Organizations

This overall profile roughly matches that of support, with almost the same rank order of organizations. Individual support by an organization does not, however, usually mean that the individual spends an equivalent amount of time

working for that organization,[24] except where employed directly by it.

% of Time	1-9	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-100	Row Totals
Local or regional government	31	14	13	4	11	2	1	4	1	7	8
National government	34	24	22	7	30	6	8	7	12	42	192
International agencies	24	16	11	6	11	1	0	1	3	13	86
Private business	26	20	16	2	13	5	3	8	5	50	148
Foundations	25	3	4	7	4	1	1	0	0	4	49
Voluntary associations	24	8	6	0	12	2	0	1	1	10	64

In many cases, the futures worker may be in a research center whose funds come from a variety of sources. If a university is the work base, he or she may be primarily engaged in teaching in a professional field but conducting research for, or consulting with, external agencies on futures studies or long range planning.

This latter pattern may be reflected in the responses to the next question.

O. Direct Involvement in Education

This was fully stated as 'involvement in education in futures studies and/or long range planning.' Responses were:

Yes	— 62%
No	— 35%
(No answer)	— 4%

The extent of that involvement was further questioned as to the percentage of time and audience.

Of those who answered 'yes' above (plus one in addition) their educational time was allocated as follows:

% of Time Allocated to Education by Individuals

% of Individuals Reporting	% of Time Spent in Education
30%	10% or less
10%	20%
9%	30%
6%	50%
3%	40%
2%	100%

Given the range of individuals, a relatively small number was *fully* engaged in teaching futures studies and/or long range planning. This needs some parenthetic comment!

(NB. In selecting individuals for the survey (outside of respondents from organizations) those who were *primarily* concerned with teaching futures courses and long range planning, at various levels, were not automatically included. The criterion for selection was based on, (a) contributions to the field, other than teaching, with (b) research in future studies and/or long range planning (c) working relationships with organizations in this area or in futures/long range projects per se.

There have been several surveys of educational work in the futures field. It would have been inappropriate to duplicate these for this report which is mainly concerned with the identification of work other than teaching.)

The audience(s) for those who indicated involvement in education are summarized in the following table.

Rank	Audience	%
1	Graduate students	23.4
2	Post graduate/professional	18.7
3	Undergraduate students	17.1
4	Government officials	13.7
5	General public	13.0
6	Corporate officials	10.7
7	Other	3.4

About sixty percent of the audience is university students at various levels, and the remainder allocated between government, business and the public. This would match well with the range of individual responses in various institutional settings in the survey, and corresponds with the end question considered here.

P. Present Occupational Function

Five categories were given, but others could be specified for inclusion in the summary of the individual's response.

Rank	Function	%
1	Research worker	25.7
2	Educator	22.9
3	Consultant	17.7
4	Administrator	14.8
5	Manager	13.3
6	Other	5.6

As a number of individuals ranked functions in several categories, e.g. administrator/research worker/consultant, the rankings were weighted in our standard mode.

The profile which emerges does correspond on the whole with the balance sought in the survey selection. We were concerned to provide a representative sample of those individuals who were actively involved with futures studies and/or long range planning in their various ways.

The United Nations Institute for Training and Research, an autonomous institution within the United Nations system, was established for the purpose of carrying out independent and objective studies.

Its programme on Futures Studies includes research projects and conferences whose object is to further scholarly investigation of the "Futures Movement". In this field, UNITAR will give priority to regional considerations in the belief that reflection on the Future should be stimulated and encouraged in the developing regions of the world. This will play an important role in influencing the decision-making processes of governmental agencies and international organizations in their long-term and global interactions. The Institute's aim is to facilitate objective appraisal and to clarify alternative modes of action. This, by necessity, leads to a multi-disciplinary approach. Consequently, the activities of the Institute are organized mainly in broad problem areas and are not along lines of conventional academic disciplines.

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(UNITAR)
801 United Nations Plaza, New York, N.Y. 10017

UNITAR PUBLICATION

Sales No. E.76.XV.FS/1

Price: $4.00
(or equivalent in other countries)